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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/957,431	10/24/1997	JOHN E. HOLLAND	378111	2082

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RHODES COATS BENNETT, L.L.P.
P O BOX 2974
GREENSBORO, NC 27402

EXAMINER

GOFF II, JOHN L

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 09/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

08/957,431

Applicant(s)

HOLLAND ET AL.

Examiner

John L. Goff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 1997 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. This action is in response to Amendment C filed on 7/7/03. All previous rejections under 35 U.S.C. 112 second paragraph have been overcome. In view of applicants amendment the previous rejections are withdrawn and new rejections are set forth below.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 25-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Amended claim 25 requires "A method for making an impervious cut and puncture resistant laminated flexible fabric". It is unclear where in the specification the fabric is described as flexible. Further, the specification does not disclose or describe what is required for a fabric to be characterized as "flexible". Amended (by previous amendment) claim 25 requires a fabric having "a denier between about 350 and 1,200". It is unclear where in the specification the fabric is described as having a denier of "between about 350 and 1,200". The specification does

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describe a fabric having a denier of 1200 (Example 1 and 14), 650 (Example 2, 4, 5, 15, and 17), 360 (Example 9) 400 (Example 10), and 375 (Example 11). However, the specification does not describe a fabric having "a denier between about 350 and 1,200". Amended claim 25 requires "a fabric formed of ... non-crosslinked ultra high molecular weight polyethylene". It is unclear where in the specification the ultra high molecular weight polyethylene is described as "non-crosslinked". New claim 26 requires tacking "before applying a pressure to the fabric". It is unclear where in the specification tacking is described as occurring before applying pressure to the fabric. Further, it appears pressure is applied to the fabric during tacking by for example heated calender rolls and a heated flat press. It is suggested to amend claim 26 to delete "before applying a pressure to the fabric" and insert (for example) therein - - before step (c) - -.

Claim Rejections - 35 USC § 103

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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6. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCarter et al. (U.S. Patent 5,567,498) in view of Park (U.S. Patent 5,547,536) and Rousseau (U.S. Patent 5,789,327).

McCarter et al. disclose a method for making a flexible ballistic article wherein the method comprises providing a fabric formed of high performance yarns (e.g. yarns selected from extended chain polyethylene, aramid, etc.), placing on at least one surface of the fabric a thermoplastic film (e.g. film of high density polyethylene, low density polyethylene, etc.) with optionally a layer of thermoplastic resin of the same type as the film therebetween, and consolidating the fabric and film under heat and pressure to form a flexible ballistic element having a thickness of not exceeding 0.0092 in. for a 2-layer laminate (i.e. the thermoplastic film has a thickness less than 24 mils) (Column 2, lines 35-39 and Column 3, lines 25-29 and Column 5, lines 44-46 and Column 6, lines 21-24 and 50-51 and Column 8, lines 4-10 and Column 9, lines 13-64 and Column 10, lines 11-18). McCarter et al. are silent as to the particular values of the lamination/process variables, i.e. amount of heat, pressure, and time. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize these variables to create a laminate having a strong bond strength between the layers as determining these variables would require nothing more than ordinary skill and routine experimentation. As to the denier of the fabric, McCarter et al. are silent as to a specific range. However, one of ordinary skill in the art at the time the invention was made would have readily appreciated using a fabric having a particular denier based upon the end use of the product. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a fabric having a denier in the claimed range as it was well known in

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the art to use as the fabric, i.e. fabric formed of high performance yarns, taught by McCarter et al. a fabric having a denier in this range as shown for example by Park and Rousseau.

Regarding claim 26, McCarter et al. do not specifically teach a lamination method having a tacking step. However, McCarter et al. are not limited to any particular laminating method such that one of ordinary skill in the art at the time the invention was made would have readily appreciated forming the ballistic article taught by McCarter et al. using a conventional method such as that suggested by Park, i.e. pre-laminating followed by laminating, as only the expected results would be achieved.

Park discloses a method for making a ballistic (i.e. impervious cut and puncture resistant) laminate wherein the method comprises providing a fabric formed of high performance yarns (e.g. yarns selected from non-crosslinked ultra high molecular weight polyethylene, aramid having a denier of for example 840, etc.), placing on at least one surface of the fabric a thermoplastic film (e.g. polyethylene film having a thickness of 0.35 mils), pre-laminating (i.e. tacking) the fabric to the film using heat and pressure (e.g. a heated plate and pressure roll), and then laminating the fabric and film under additional heat and pressure (e.g. heated press rolls) to form a laminate capable of being wound, i.e. the laminate intrinsically has some degree of flexibility such that it can be wound on a take-up roll (Figure 1 and Column 2, lines 12-15, 18-21, and 39-41 and Column 4, lines 4-10).

Rousseau discloses a flexible ballistic panel wherein the panel comprises a fabric formed of high performance yarns (e.g. yarns selected from ultra high molecular weight polyethylene, aramid, etc. and having a denier between 700 and 1600) laminated to a thermoplastic film (e.g.

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polyethylene, etc.) (Column 2, lines 46-48 and Column 4, lines 43-54 and Column 5, lines 51-57).

7. Claims 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCarter et al., Park, and Rousseau as applied in paragraph 6 above, and further in view of Anderson (U.S. Patent 4,424,253).

McCarter et al., Park, and Rousseau as applied above teach all of the limitations in claims 27-29 except for a teaching of alternative laminating devices for tacking and/or laminating the fabric and film. It is noted McCarter et al. as modified by Park and Rousseau teach tacking using a heated plate and pressure roll and laminating using heated press rolls. However, McCarter et al., Park, and Rousseau are not limited to any particular laminating device such that it would have been obvious to one of ordinary skill in the art at the time the invention was made to tack and/or laminate the fabric and film taught by McCarter et al. as modified by Park and Rousseau using laminating devices, i.e. devices that laminate two substrates using heat and pressure, such as hot-roll calenders, heated hydraulic presses, etc. as these are well known and standard laminating devices as shown for example by Anderson and only the expected results would be achieved, i.e. the use of two rolls or one roll and a plate would create a continuous process and the use of a press (no rolls) would create a batch process.

Anderson is directed to laminating sheet structures including polyolefins. Anderson teaches the structures are laminated using standard equipment in the art such as hot-roll calenders, rotary press, heated hydraulic press, sets of laminating rolls, etc. (Column 1, lines 10-13 and Column 4, lines 29-32).

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8. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of McCarter et al.

Park discloses a method for making a ballistic (i.e. impervious cut and puncture resistant) laminate wherein the method comprises providing a fabric formed of high performance yarns (e.g. yarns selected from non-crosslinked ultra high molecular weight polyethylene, aramid having a denier of for example 840, etc.), placing on at least one surface of the fabric a thermoplastic film (e.g. polyethylene film having a thickness of 0.35 mils), pre-laminating (i.e. tacking) the fabric to the film using heat and pressure (e.g. a heated plate and pressure roll), and then laminating the fabric and film under additional heat and pressure (e.g. heated press rolls) to form a laminate capable of being wound, i.e. the laminate intrinsically has some degree of flexibility such that it can be wound on a take-up roll (Figure 1 and Column 2, lines 12-15, 18-21, and 39-41 and Column 4, lines 4-10). Park does not specifically teach using as the thermoplastic film high or low density polyethylene. However, it is noted Park teaches using polyethylene as the thermoplastic film, and Park is not limited to any particular type of polyethylene. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the polyethylene film taught by Park a high or low density polyethylene as it was well known in the art to form ballistic laminates comprising fabric bonded to thermoplastic films of this type, i.e. high or low density polyethylene, as shown for example by McCarter et al. Park is further silent as to the particular values of the lamination/process variables, i.e. amount of heat, pressure, and time. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize these variables to create a

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laminate having a strong bond strength between the layers as determining these variables would require nothing more than ordinary skill and routine experimentation.

It is noted Park does not specifically disclose the laminate is flexible. However, it is noted the laminate is wound on a take-up roll such that it would intrinsically have some degree of flexibility. Furthermore, one of ordinary skill in the art at the time the invention was made would have readily appreciated that the laminate taught by Park is flexible as it is well known in the art that laminates formed of the materials taught by Park are flexible as shown for example by McCarter et al. who characterizes laminates formed of materials substantially the same as that taught by Park as flexible.

McCarter et al. disclose a method for making a flexible ballistic article wherein the method comprises providing a fabric formed of high performance yarns (e.g. yarns selected from extended chain polyethylene, aramid, etc.), placing on at least one surface of the fabric a thermoplastic film (e.g. film of high density polyethylene, low density polyethylene, etc.) with optionally a layer of thermoplastic resin of the same type as the film therebetween, and consolidating the fabric and film under heat and pressure to form a flexible ballistic element having a thickness of not exceeding 0.0092 in. for a 2-layer laminate (i.e. the thermoplastic film has a thickness less than 24 mils) (Column 2, lines 35-39 and Column 3, lines 25-29 and Column 5, lines 44-46 and Column 6, lines 21-24 and 50-51 and Column 8, lines 4-10 and Column 9, lines 13-64 and Column 10, lines 11-18).

9. Claims 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park and McCarter et al. as applied in paragraph 8 above, and further in view of Anderson.

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Park and McCarter et al. as applied above teach all of the limitations in claims 27-29 except for a teaching of alternative laminating devices for tacking and/or laminating the fabric and film. It is noted Park as modified by McCarter et al. teach tacking using a heated plate and pressure roll and laminating using heated press rolls. However, Park and McCarter et al. are not limited to any particular laminating device such that it would have been obvious to one of ordinary skill in the art at the time the invention was made to tack and/or laminate the fabric and film taught by Park as modified by McCarter et al. using laminating devices, i.e. devices that laminate two substrates using heat and pressure, such as hot-roll calenders, heated hydraulic presses, etc. as these are well known and standard laminating devices as shown for example by Anderson and only the expected results would be achieved, i.e. the use of two rolls or one roll and a plate would create a continuous process and the use of a press (no rolls) would create a batch process.

Anderson is directed to laminating sheet structures including polyolefins. Anderson teaches the structures are laminated using standard equipment in the art such as hot-roll calenders, rotary press, heated hydraulic press, sets of laminating rolls, etc. (Column 1, lines 10-13 and Column 4, lines 29-32).

Response to Arguments

10. Applicant's arguments with respect to claims 25-29 have been considered but are moot in view of the new ground(s) of rejection. As to applicants arguments regarding the claimed fabric denier range, it is still unclear where in the specification a fabric having a denier of 350 to 1,200 is disclosed.

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Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **703-305-7481**. The examiner can normally be reached on M-Th (8 - 5) and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on 703-308-2058. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



John L. Goff



Michael W. Ball
Supervisory Patent Examiner
Technology Center 1700